

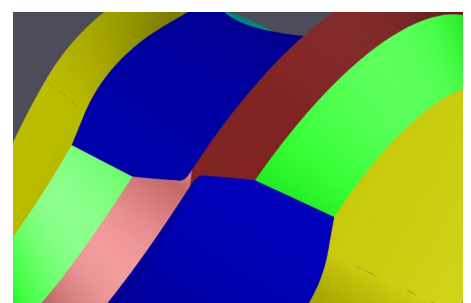
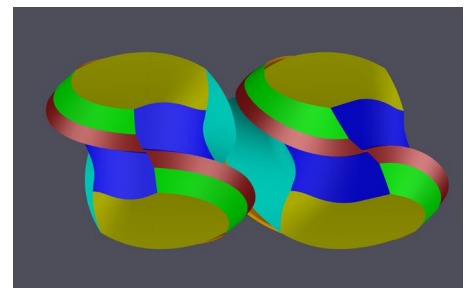
The Endmill package in ANCA's latest ToolRoom release will allow end users to manufacture complex cutting tool geometry and high performance endmills to boost tool productivity.

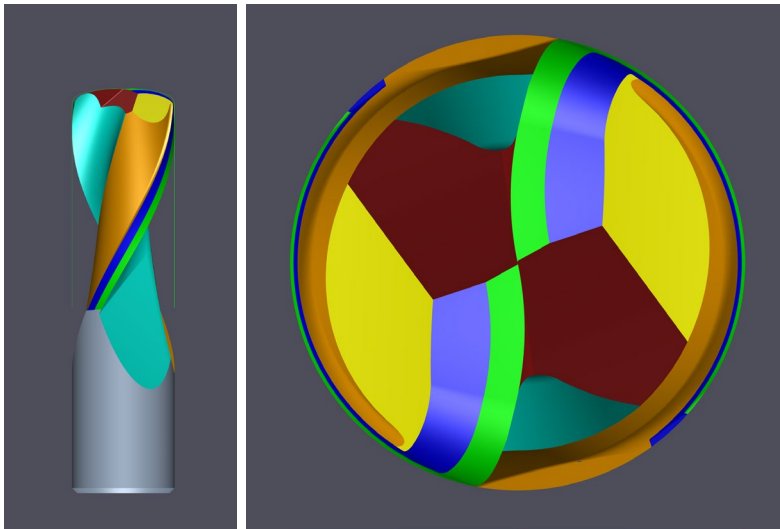
With a focus on manufacturing high performance endmills and complex cutting tool geometries for the aerospace, die mould and power generation industries, the new features in ToolRoom RN34 will help you achieve better cutting performance and increased tool life with enhanced endmill geometries.

NEW BALLNOSE CYCLES – OD BALL FINISH AND BALL GASH

The new ballnose cycles allow end users to manufacture a range of ballnose tools suitable for finishing and roughing. The new designer edge can accommodate high helix on ball cutting edge for better fracture resistance and reduced vibration due to the irregular curve.

- Ballnose with designer cutting edge.
- New chisel edge grinding method.
- Curvature gash – curved gash surface.
- Flute gash – curved ball gash and fluting in single move.
- Facet gash with periphery of 1A1 or 1V1 wheels.
- Bullet and Bullnose style tools.
- 11V5 wheel grinding methods for improved wheel life.
- Square to ballnose blank roughing cycles.
- Various other methods of OD grinding with 11M2 wheels.





NEW TOOLTYPE – DOUBLE CORNER RADIUS

The double corner radius allows the design of barrel shape or lens shaped tools with larger to smaller or smaller to larger radius from the end of tool. Vibration and deflection are reduced with this style of geometry and the thinner chips that are formed provide longer tool life and enhanced performance.

- Barrel shape – large radius to small towards the end of tool.
- Lens shape – small to larger radius towards the endface.
- Curved endface design.
- Roughing operation for corner radius tools.

NEW FLUTE FROM SOLID AND FLUTE POLISH CYCLES

The new fluting cycles are catered for manufacturing variable helix and pitch tools to eliminate the harmonics caused during high speed machining by varying the time intervals between the flute contact with the workpiece.

- Support for the following option combinations:
 - Variable helix with NAS hook
 - NAS hook with radial land
 - Variable helix and pitch with radial land
- Per-Flute programming options to control flute length, flute depth, core taper etc. individually.
- Support for single flute tools to have depth equal or greater than tool radius.

| Flute | EOT | Shank |
|-------|--------|--------|
| 1 | 38.0 ° | 42.0 ° |
| 2 | 39.0 ° | 41.0 ° |
| 3 | 40.0 ° | 40.0 ° |
| 4 | 37.0 ° | 42.0 ° |
| 5 | 38.0 ° | 41.0 ° |

Flute Spacing
 Equal Variable

| Flute | Index Position |
|-------|----------------|
| 1 | 0.0 ° |
| 2 | 74.0 ° |
| 3 | 140.0 ° |
| 4 | 220.0 ° |
| 5 | 284.0 ° |

Tool Balancing FLUTE EXTENSION OR NOTCH

Initial Balance

Quality grade (G): 3.98 mm/s at RPM 10000 rpm

Unbalance: 0.783 (mm g) at Density 15.6 g/cm³

Tool Balancing

Resulting Balance

Quality grade (G): 0.00 mm/s at RPM 10000 rpm

Unbalance: 0.000 (mm g) at Density 15.6 g/cm³

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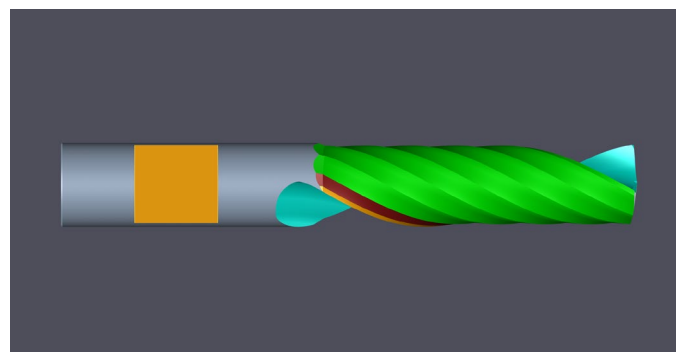
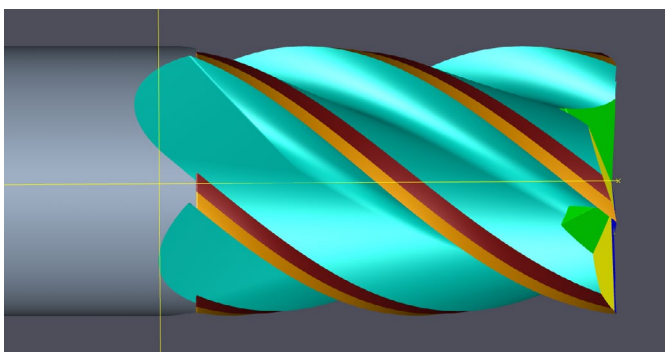
Unbalance: 0.000 (mm g) at Density 15.6 g/cm³

TOOL BALANCING – GET THE BALANCE RIGHT WITH AUTOMATIC BALANCING

Tool balancing is done on variable helix and pitch or single flute tools to minimise the eccentric weight distribution when using high speed machining. The benefits include reduced noise and vibrations, improved machine bearing life, and better surface finish.

The different methods of balance are:

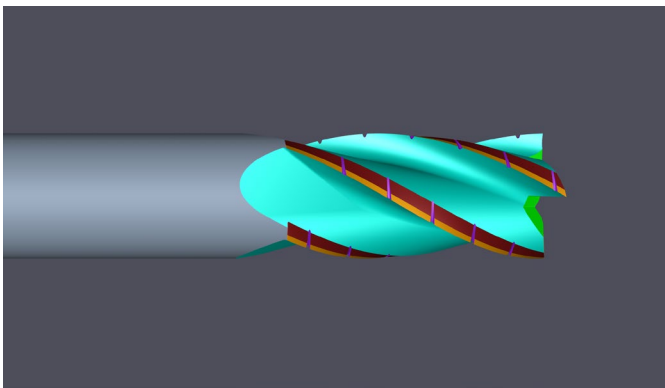
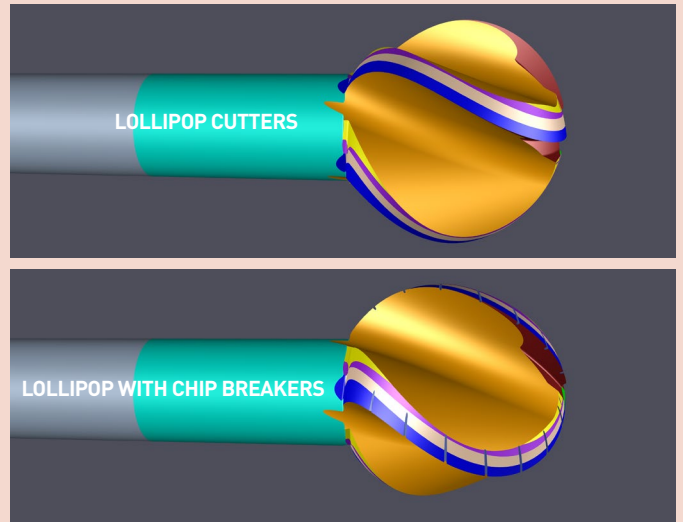
- Flute length extension
- Shank notch



NEW TOOLTYPE – LOLLIPOP CUTTER

A new ToolType is available from the endmill wizard to manufacture lollipop cutters. These cutters are widely used in the aerospace and die mould industries.

- High helix angles for better surface finish and chip removal.
- Shear lollipop for deburring applications.
- Chip breakers for light work and the medical industry.
- Use of iView and LaserPlus for measurement and compensation.



ENDMILLS – OD CHIP BREAKERS

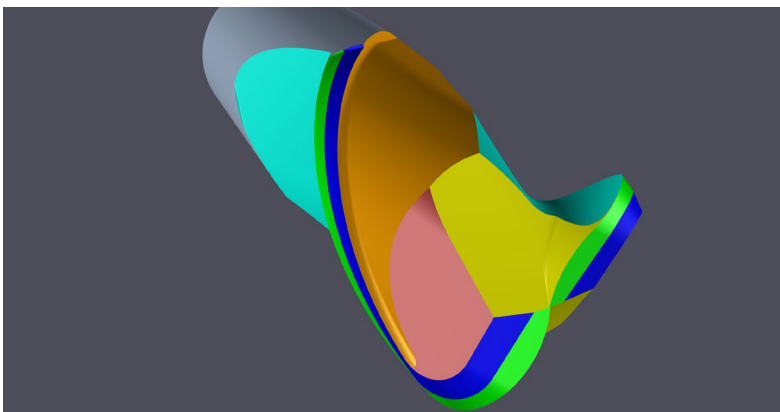
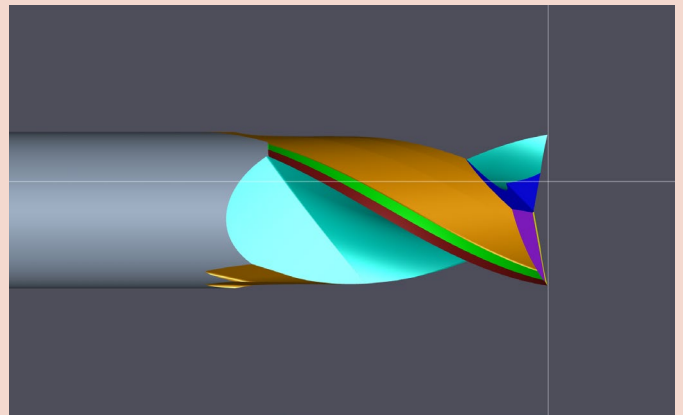
New operation in Endmill cycles to add OD chip breakers.

- Automatic or manual modes.
- Applicable to all straight OD profile to complement corner radius, ballnose, side and face cutters and endface operations. A library of all the ANCA supplied collet adaptors and collets are available for the user.

ENDMILLS – REVERSE INFEEED IN SQUARE ENDMILLS

Support for reverse infeed when using large dish angles on square endmills where we can manage wheel wear with number of passes.

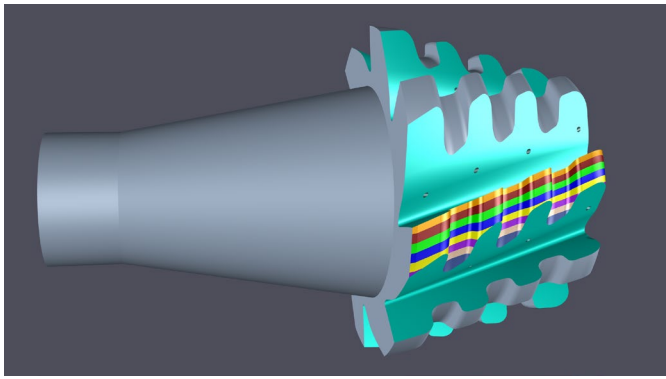
- Ability to choose between forward and reverse infeeds.



EMBEDDED TOM FILES

This adds additional functionality in allowing one TOM file to be embedded into another TOM file.

- Example: Corner radius with multi drill gash.
- Like the iPunch operation in iGrind and KHP.
- Some limitations exist, such as use of tool segments.



HELICAL FIR TREE CUTTERS

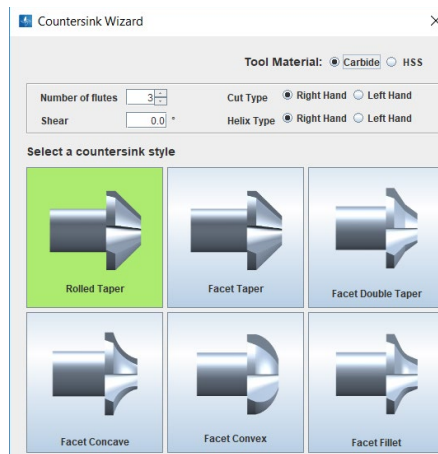
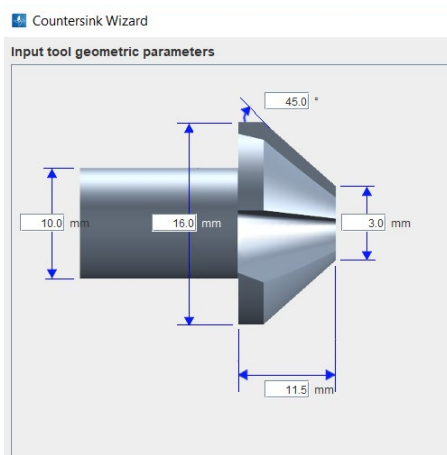
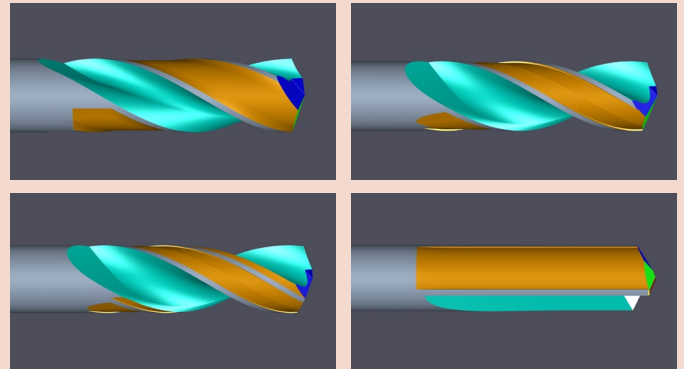
Support for a wide range of constant helix, constant lead and shear cutters widely used in the aerospace and power generation industries. All the above are supported for unmanned production with the support of the inbuilt LaserPlus which is fully automated.

- Support for constant helix fir tree cutters.
- Helical fluting with hook generating a flat flute surface.
- Support for iView and LaserPlus.

DRILLS – DOUBLE MARGIN FIXED OR FLOAT

A new feature is added to OD backoff/raised land fluting operation for drills, to be able to produce second margin towards trailing edge of the tool.

- Double margin can be produced in both the backoff types OD and raised.
- The second margin can also float at an offset angle from cutting edge of the tool.
- This feature is made available to drills and step tools.



NEW TOOLTYPE – COUNTER-SINK TOOL

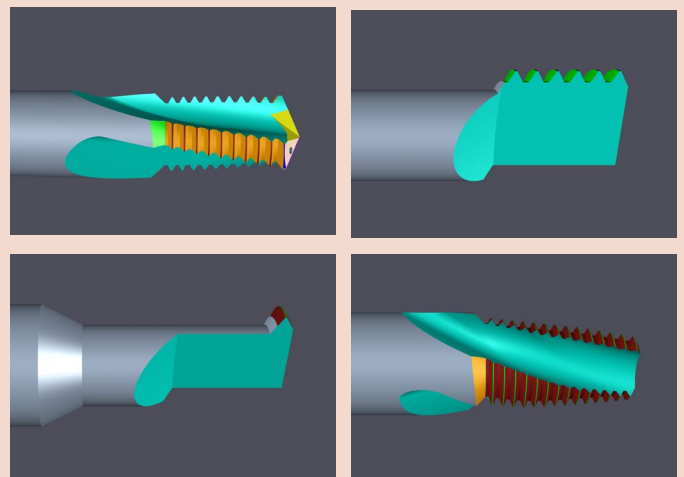
A new wizard style ToolType has been added for countersink tools to support standard flute and fan gash flute style. The new countersink flute operation can define special flute shapes required for this application.

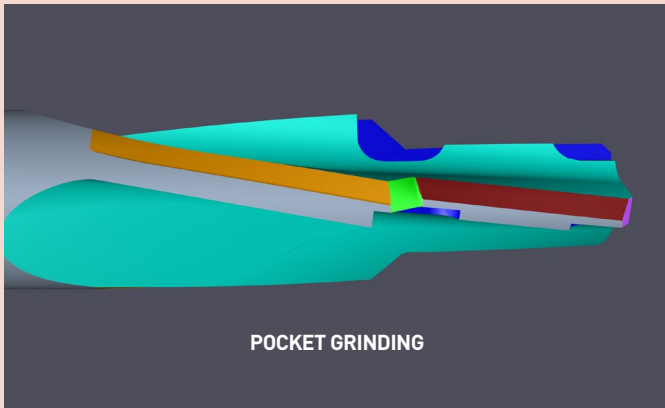
- Support for RR, LL, RL, LR combinations.
- Relief grinding using step editor sections.
- Supports non-zero shear and upto 6 flutes.
- Automatic CIM3D blank form.

NEW OPERATION – THREADMILL

Manufacturing of a variety of threadmills is now possible with the addition of two new operations to the operations list. Threadmill grinding and cresting operations are supported with formed and standard fluting operations.

- Support for drill threadmill, straight OD, tapered OD and all the combinations.
- Possible to grind insert style or single rib threadmills.
- LaserPlus support for large volume production.





NEW OPERATION – POCKET GRINDING

Pocket grinding software allows the user to quickly and easily define PCD pocket geometry. This is required for PCD tools used mainly in the woodworking and aerospace industries for composite and non-ferrous materials.

- Ability to specify pocket geometry as common or for individual flutes.
- Position of pockets can be fixed or alternated based on number of flutes.
- Supported with spindle speed increaser hardware on all platforms for mounted point wheels.

OTHER NEW FEATURES OF TOOLROOM RN34 INCLUDE:

- Additional wizard support for shear in endmills and drills for manufacturing a range of shear endmills and drills.
- Outer diameter measurement with probe in cylindrical grinding - use top and bottom measurement for OD measurement for compensation.
- LaserPlus ball radius display instead of errors to log and compensate the ball.
- Eccentric digitising for compression routers for manufacturing if there is runout from work holding.
- Flat digitising into iGrind to accurately position flats with reference to endface.
- Feedrate per element in profile step section to help and manage differences in stock removal.
- Rolled profile operation which allows grinding of hob tools by introducing a "thread lead" used to add a lead to the profile form. The operation enables the grinding of hob tools without using a formed grinding wheel.
- Ability to copy a step section a specified number of times, with an incremental offset applied to the geometry of each section.
- New operation to digitise backface and set end of tool position.
- Surface grinding operation in iPunch that performs reciprocal grinding, like a surface grinder.
- New launch pad which can be activated from iGrind.
- Profile compensation has been added for rolled profile step sections. Compensation may be applied manually or through iView.
- A new feature of securing a TOM file which allows users to:
 - Create new secure TOM file
 - Convert existing TOM file to secure TOM file
 - Provide access defined criteria for the file with password and constraint to which machine can access.
 - Access secure TOM files in Loadermate, Tool Library, or Scripting.
- Profile editor features:
 - Diameter coordinates synced with Y coordinate.
 - New line definition mode – start, angle, end X/Y.
 - Split element for circles – enters start angle.
 - Fillet support for splines and ellipses.
 - Trim to splines and ellipses.
 - Profile compensation support for splines.

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